

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

**DONNA CURLING, ET AL.,
Plaintiffs,**

v.

**BRAD RAFFENSPERGER, ET AL.,
Defendants.**

Civil Action No. 1:17-CV-2989-AT

**DECLARATION OF NATHAN D. WOODS, PHD IN SUPPORT
OF CURLING PLAINTIFFS' RESPONSE TO STATE DEFENDANTS'
REQUEST FOR STATUS CONFERENCE AND NOTICE OF
DECERTIFICATION OF GEMS/DRE SYSTEM AND
CURLING PLAINTIFFS' REQUEST FOR HEARING**

TABLE OF CONTENTS

I.	BACKGROUND AND QUALIFICATIONS.....	1
II.	ASSIGNMENT.....	3
III.	THE MATERIALS PROVIDED FOR COBB AND DEKALB COUNTIES DO INCLUDE THE MOST RECENT ELECTION AND PRECINCT IN WHICH DRE MACHINES WERE USED, AS OF MAY 22, 2018.....	4
IV.	THE “INVENTORY LISTS” PROVIDED BY THE STATE OF GEORGIA DO NOT INCLUDE THE MOST RECENT ELECTION AND PRECINCT IN WHICH ELECTION MACHINES WERE USED	8
V.	REQUEST FOR DATA	9
APPENDIX A. CURRICULUM VITAE		1
APPENDIX B. MATERIALS RELIED UPON		11

I. BACKGROUND AND QUALIFICATIONS

1. I am a Partner with Edgeworth Economics, a firm specializing in economic and statistics research, where I have worked for four and a half years. I worked previously with Welch Consulting for more than 13 years, most recently as Vice President and Director of the firm's Washington DC office. I have submitted expert reports and testified on damages issues, statistics, analysis of class certification topics, the use of data in wage and hour matters, sampling, extrapolation, and adverse impact, in administrative, state and federal courts. I also work extensively on a consulting basis to analyze data relating to hiring, promotions, terminations, compensation, lost earnings and other topics. I have personal knowledge of the facts in this declaration and, if called to testify as a witness, I would testify under oath to these facts.

2. I earned a PhD in Political Science from the Claremont Graduate University's School of Politics and Economics where my academic training and research were focused on answering empirical questions using statistical methods. I took many courses on or involving quantitative methods and sampling. I have taught several courses, including a graduate seminar in advanced quantitative methods and an upper level undergraduate seminar in public opinion. I have published numerous peer reviewed papers in academic journals, and I have written

pieces for trade publications as well on topics related to statistics, class certification and sampling. I speak often at Continuing Legal Education conferences and in webinars on statistical topics relating to analysis of class action issues, sampling and representative data, estimates of damages and pay equity.

3. I previously designed and identified two DRE machine samples in this matter – for Cobb and DeKalb Counties, respectively – which I understand were provided to counsel for the two Counties in Summer 2018. Separately, on July 18, 2019, I submitted a declaration which commented on the “parallel testing” sample aspect of the Declaration of Michael Shamos, PhD., J.D., in Opposition to Plaintiffs’ Motion for a Preliminary Injunction, ECF No. 472-1.¹ My firm is providing my services and the services of my associates on a pro bono basis and my compensation is not contingent on my opinions or the outcome of the case. A copy of my curriculum vitae, which includes a list of my publications and testimony, is attached as **Appendix A**.

¹ Declaration of Nathan D. Woods, PhD in Support of Plaintiffs’ Motion for a Preliminary Injunction, July 18, 2019.

II. ASSIGNMENT

4. I have been asked by counsel for the Curling Plaintiffs to describe the data elements required to design and draw a statistical sample of DRE machines which enables evaluation of whether malware operated on those machines in certain precincts and in certain elections. The materials² I relied upon in Summer 2018 to devise and draw samples for Cobb and DeKalb Counties do include this necessary information. I understand Defendants suggest that “Inventory Lists”³ of individual machines provided by the State of Georgia are adequate for this purpose, however, those data do not include any indication of the election and precinct in which the machine was last used.

5. In preparing this declaration I, and staff working under my direction, reviewed the “Inventory Lists” provided by the State of Georgia in 2019 and the materials I received in Summer 2018 for Cobb and DeKalb Counties. A list of materials upon which I relied is attached as **Appendix B**.⁴

² Appendix B.

³ Appendix B.

⁴ If additional information is provided to me in this litigation, I will analyze it, consider it as part of my opinions and supplement this report, as appropriate.

**III. THE PRIOR MATERIALS PROVIDED FOR COBB AND DEKALB COUNTIES DO
INCLUDE THE MOST RECENT ELECTION AND PRECINCT IN WHICH DRE
MACHINES WERE USED, AS OF MAY 22, 2018**

6. In the Spring of 2018, I was asked to design and draw samples of the DRE machines in Fulton, Cobb, and DeKalb Counties. In order to design and draw the samples, I requested information from each County which reflected the (a) election and (b) precinct in which each DRE machine was most recently used. I requested information for the last election and precinct in which machines were used for two reasons.

7. First, I sought to ensure that the sample, once obtained, would include DRE machines from all potentially relevant elections. I understand that any DRE machine used in a given election is first cleared of all information from the prior election in which it was used. I understand further that many DRE machines are reused in a subsequent election, meaning that fewer DRE machines are still available to preserve which were last used in earlier elections. For example, using the information available to me in June 2018, in DeKalb County, about 94.5 percent of DRE machines used on April 18, 2017 were reused in a subsequent

election.⁵ As such, my sample design took into account the last election in which a DRE machine was used to ensure a sample of DRE machines was available for each election – particularly those held on April 18, 2017 and June 20, 2017.

8. If my sampling design ignored (or did not have) the most recent election in which the machine was used, it would be impossible to identify which machines from earlier elections were subsequently reused. Using another example from DeKalb County, just 153 out of 2,407 DRE machines (6.4 percent) used in the November 8, 2016 election had not been reused in a subsequent election as of June 2018.

9. By ignoring or omitting the most recent election in which a DRE machine was used as part of the sample design, the relatively small number of machines only used in earlier elections (i.e. not wiped and reused) would have a low probability of being selected, and could be omitted from the sample altogether. No analysis of the DRE machines in those elections would then be possible.

⁵ Among the 325 DRE machines used in the April 18, 2017, 307 (94.5 percent) were reused in a subsequent election, leaving just 18 (5.5 percent) DRE machines available to evaluate the April 18, 2017 election in DeKalb County.

10. Second, I wanted to ensure the sample, once obtained, would account for the different precincts in each County and ensure a sample of DRE machines in each precinct.

11. If my sampling design ignored (or did not have) precinct information, I would have unintentionally selected a larger sample of machines from larger precincts (with more machines), and fewer or perhaps no machines at all in smaller precincts (with fewer machines). For example, in DeKalb County the number of DRE machines ranged from as many as 25 to as few as 4 in a precinct in the November 8, 2016 election. By ignoring precinct information as part of the sample design, the precincts with more machines would be over-sampled and precincts with fewer machines would be under-sampled or excluded altogether. Smaller precincts with fewer machines would therefore be less likely to be sampled and preserved for evaluation.

12. In response to my request, in June 2018, I received “Direct Record Electronic Voting (DRE) Machine Recap Sheets” from Cobb and DeKalb which included information for eight elections held on November 8, 2016; March 21, 2017; April 18, 2017; May 16, 2017; June 20, 2017; November 7, 2017; December

5, 2017; and May 22, 2018.⁶ The sheets provide vote counts for each precinct with election dates and machine serial numbers. The information allowed me to identify the most recent election and precinct in which each DRE machine was used, and I relied on this information to draw the samples I provided for Cobb and DeKalb Counties.

13. This information was useful for purposes of drawing samples in Summer 2018 for the two Counties, but for the current purposes the scope of the data is insufficient. First, the available data do not include any elections subsequent to May 22, 2018 in Cobb or DeKalb Counties. Second, Cobb and DeKalb are just two of 159 Counties in the State of Georgia. In other words, the data available to me from Summer 2018 does not include the necessary information for any County other than Cobb and DeKalb, and for those two Counties the necessary information is not available for five total elections (four in DeKalb and five in Cobb) occurring in July 2018, November 2018, December 2018, November 2019, and December 2019.

⁶ I received similar information from Fulton County but it was incomplete and I did not ultimately receive complete information to draw and design a sample as I did for Cobb and DeKalb counties.

**IV. THE “INVENTORY LISTS” PROVIDED BY THE STATE OF GEORGIA DO NOT
INCLUDE THE MOST RECENT ELECTION AND PRECINCT IN WHICH
ELECTION MACHINES WERE USED**

14. In December 2019, I received “Inventory Lists” for various types of machines, which I understand to be the universe of election machines used throughout the State of Georgia. The different lists include Express Poll, Optical Scanner, and TouchScreen machines.⁷ I also received TouchScreen County Transfer Records and Server Inventory. Unlike the DRE Recap Sheets previously received and relied upon for Cobb and DeKalb Counties, these inventory lists are not recorded by election or precinct, and they do not contain any information for these elements. They provide machine serial numbers with county, and certain other information, but no election or precinct data.

15. Because the data does not include information on the election and precinct in which the DRE machine was last used, I cannot incorporate the individual election or precinct information into the sample design as I was able to in Cobb and DeKalb Counties, and as I must do for any reliable sample which takes account of the reused DRE machine and varying precinct size issues discussed above. As I described, without the most recent election information, my sampling design

⁷ I understand this information may have been provided to counsel for Plaintiffs in Summer 2019.

cannot ensure that machines used in earlier elections, which were not reused in subsequent elections, are identified and preserved for evaluation. Also described above, without the precinct information, my sampling design cannot account for precinct size and ensure that smaller precincts with fewer machines are appropriately represented in the sample and preserved for evaluation.

V. REQUEST FOR DATA

16. In order to draw a statistical sample which is adequate to ensure DRE machines are included across each of the relevant Georgia elections and different precincts, information on the most recent election and precinct in which the DRE machine was used needs to be provided. This information needs to be provided with the unique serial number for each DRE machine, for each election occurring in the State of Georgia since November 8, 2016, much like it was with the information I received for Cobb and DeKalb Counties in the Summer of 2018.

I declare under the penalty of perjury that the foregoing is true and correct.

Dated this 7th day of January, 2020 in Washington, DC.



Nathan D. Woods, PhD

APPENDIX A. CURRICULUM VITAE



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January 2020

**Nathan D. Woods, Ph.D.
Partner**

Dr. Woods is an expert with more than 18 years of experience analyzing topics relating to class certification, labor and employment, sampling, extrapolation, and damage estimates. He applies his expertise in the construction and statistical analysis of large, complex data sets to assist clients in analyzing issues related to allegations of discrimination against gender, race/ethnic and age protected groups and all manner of wage and hour topics under federal and various state laws. He also provides guidance on sample design in a variety of contexts, including in healthcare and business disputes.

As an expert witness, Dr. Woods analyzes data and testifies on class action topics involving commonality, typicality, allegations of work “off-the-clock”, non-payment of overtime, meal break violations, on issues related to manageability, representative sampling, extrapolation, damages, and on adverse impact studies. Dr. Woods has testified in bench and jury trials, in state and federal courts, and in administrative proceedings.

Outside of litigation, Dr. Woods regularly consults with Fortune 500 clients on a variety of labor and employment and other analytical topics. Included among these are assistance with the implementation and evaluation of large-scale diversity initiatives, monitoring of pay equity, performance, hiring and other employment decisions for possible adverse impact, auditing wage and hour compliance, and economic analyses of wages and benefits issues arising out of collective bargaining agreements. Dr. Woods often communicates complicated analysis results to affected stakeholder groups, including union membership, management, and legal counsel.

His peer-reviewed academic research focuses on using statistical analysis to answer questions related to race and ethnicity, representation, public opinion, and participation. He has published in *the American Political Science Review*, *the American Review of Politics*, *Bender's California Labor and Employment Bulletin*, *the Federal Employment Law Insider*, *the Journal of Health Care Compliance*, *the Journal of Politics*, *the Journal of Urban Affairs*, *Law360*, *the National Civic Review*, *PS, Political Research Quarterly*, *Social Sciences Quarterly*, *the Urban Affairs Review*, and as chapters in three edited volumes. He frequently writes and speaks on economic and statistical approaches to analysis of class certification, discrimination, and wage and hour questions. Dr. Woods has taught several courses to undergraduate and graduate students, including an advanced quantitative analysis graduate seminar at the University of Southern California.

Dr. Woods received his Ph.D. and M.A. degrees in Political Science from the School of Politics and Economics at the Claremont Graduate University and his B.A. in Political Science from the University of California, Davis.

EDUCATION

Claremont Graduate University
Ph.D., Political Science, 2004
M.A., Political Science, 1999

University of California, Davis
B.A., Political Science, 1997

CURRENT EMPLOYMENT

Edgeworth Economics, Washington, DC
March 2015-present, Partner

EMPLOYMENT HISTORY

Welch Consulting, Washington, DC
2007-2015 Vice President and Director
2003-2007 Economist (Santa Monica, CA)
2001-2003 Associate Economist (Santa Monica, CA)

University of Southern California, Los Angeles, CA
2005-2006 Adjunct Assistant Professor

Center for the Study of Los Angeles, Loyola Marymount University, Los Angeles, CA
2002-present Research Scholar and Statistical Consultant

McNair Scholars Program, Claremont Graduate University, Claremont, CA
2001-2002 Adjunct Assistant Professor

Chaffey College, Rancho Cucamonga, CA
1999-2001 Adjunct Assistant Professor

Tomás Rivera Policy Institute, Claremont, CA
1998-2000 Research Associate

HONORS AND PROFESSIONAL ACTIVITIES

American Bar Association, Member
Labor & Employment Section and Litigation Section: Employment & Labor Relations Committee
American Conference Institute, Continuing Legal Education, Speaker
Bridgeport, Continuing Legal Education, Speaker
Haynes Dissertation Fellowship, 2001-2002
Transitions Toward Diversity Fellowship, Chaffey College, 1999-2000
Claremont Graduate University SPE (1997-1998) and Richter Memorial Fellowships (1998-2000)

TESTIMONY AND EXPERT REPORTS (JULY 2015 TO PRESENT)

Expert Rebuttal Report on behalf of East Penn Manufacturing Co. in the matter of Eugene Scalia, Secretary of Labor, United States Department of Labor v. East Penn Manufacturing Co., Case No. 5:18-cv-01194-GEKP, United States District Court, Eastern District of Pennsylvania, November 22, 2019.

Expert Deposition Testimony on behalf of Omnicare Inc et. al. in the matter of Daniel Davis v. Omnicare Inc. et. al., Case No. 5:18-cv-00142-REW-MAS, United States District Court, Eastern District of Kentucky, Lexington Division, October 31, 2019.

Expert Declaration on behalf of Ecolab Inc. in the matter of Stuart Thomas v. Ecolab Inc., Case No. 01-18-002-5048, American Arbitration Association, October 25, 2019.

Expert Declaration on behalf of Ecolab Inc. in the matter of Stuart Thomas v. Ecolab Inc., Case No. 01-18-002-5048, American Arbitration Association, October 4, 2019.

Expert Report on behalf of Omnicare Inc et. al. in the matter of Daniel Davis v. Omnicare Inc. et. al., Case No. 5:18-cv-00142-REW-MAS, United States District Court, Eastern District of Kentucky, Lexington Division, September 30, 2019.

Expert Report on behalf of East Penn Manufacturing Co. in the matter of Eugene Scalia, Secretary of Labor, United States Department of Labor v. East Penn Manufacturing Co., Case No. 5:18-cv-01194-GEKP, United States District Court, Eastern District of Pennsylvania, September 13, 2019.

Expert Declaration on behalf of East Penn Manufacturing Co. in the matter of Eugene Scalia, Secretary of Labor, United States Department of Labor v. East Penn Manufacturing Co., Case No. 5:18-cv-01194-GEKP, United States District Court, Eastern District of Pennsylvania, August 29, 2019.

Expert Declaration on behalf of Donna Curling et. al. in the matter of Donna Curling et. al. v. Brad Raffensperger et. al., Case No. 1:17-CV-2989-AT, United States District Court, Northern District of Georgia, Atlanta Division, July 18, 2019.

Expert Deposition Testimony on behalf of International Business Machines Corporation (IBM) in the matter of Gerald Iacono v. IBM., Case No. 2:17-cv-08083-FMO-PLA, United States District Court, Central District of California, April 2, 2019.

Expert Report on behalf of International Business Machines Corporation (IBM) in the matter of Gerald Iacono v. IBM., Case No. 2:17-cv-08083-FMO-PLA, United States District Court, Central District of California, March 5, 2019.

Expert Report on behalf of Coach Inc. (Tapestry Inc.) in the matter of Martha Vaughn et al. v. Coach Inc., Case No. 3:16-cv-04633-VC, United States District Court, Northern District of California, October 26, 2018.

Expert Declaration on behalf of the Government of the District of Columbia in the matter of Nickoya Hoyte et al. v. Government of the District of Columbia, Case No. 1:13-cv-00569 (CRC), United States District Court, District of Columbia, October 5, 2018.

TESTIMONY AND EXPERT REPORTS (JULY 2015 TO PRESENT CONT.)

Expert Report on behalf of the Government of the District of Columbia in the matter of Nickoya Hoyte et al. v. Government of the District of Columbia, Case No. 1:13-cv-00569 (CRC), United States District Court, District of Columbia, March 28, 2018.

Expert Trial Testimony on behalf of Omnicare Inc. in the matter of Eric Young v. Omnicare Inc., Case No. CIV. 5:16-cv-09788, United States District Court, Southern District of West Virginia, Beckley Division, February 28, 2018.

Amended Expert Report on behalf of Omnicare Inc. in the matter of Eric Young v. Omnicare Inc., Case No. CIV. 5:16-cv-09788, United States District Court, Southern District of West Virginia, Beckley Division, February 22, 2018.

Expert Report on behalf of Omnicare Inc. in the matter of Eric Young v. Omnicare Inc., Case No. CIV. 5:16-cv-09788, United States District Court, Southern District of West Virginia, Beckley Division, February 19, 2018.

Expert Affidavit on behalf of BJC Health System in the matter of Annette Speraneo v. BJC Health System., Case No. 1322-CC09701, Twenty-Second Judicial Circuit, City of St. Louis, Missouri, June 30, 2017.

Expert Report on behalf of Quanta Services Inc. in the matter of Michael DonMoyer v. Quanta Services, Inc., Case No. 1:15-cv-01992-RPM, United States District Court, District of Colorado, May 17, 2017.

Expert Report on behalf of Faneuil, Inc. in the matter of Tammy McNeil v. Faneuil, Inc., Civil Action No: 4:15-cv-81, United States District Court, Eastern District of Virginia, Newport News Division, April 13, 2017.

Expert Declaration on behalf of Schlumberger Technology Corporation in the matter of Chris Elliott v. Schlumberger Technology Corporation and Schlumberger Limited (Schlumberger N.V.), Case No. 3:13-cv-0079, United States District Court, District Court of North Dakota, January 19, 2017.

Expert Report on behalf of Bayhealth Medical Center Inc. in the matter of Dawn Mitchell v. Bayhealth Medical Center Inc., Case No. 1:15-cv-00187-LPS, United States District Court, District Court of Delaware, December 2, 2016.

Expert Trial Testimony on behalf of Starbucks Corporation in the matter of Kileigh Carrington v. Starbucks Corporation, Case No. 37-2014-00018637-CU-OE-CTL, Superior Court of the State of California, County of San Diego, October 27, 2016.

Supplemental Expert Declaration on behalf of Starbucks Corporation in the matter of Kileigh Carrington v. Starbucks Corporation, Case No. 37-2014-00018637-CU-OE-CTL, Superior Court of the State of California, County of San Diego, October 19, 2016.

Expert Report on behalf of LVNV Funding, LLC. in the matter of Tara Dorrian v. LVNV Funding, LLC., Case No. 2014-02684-BLS2, Commonwealth of Massachusetts, Suffolk, SS. Superior Court Department, September 30, 2016.

Supplemental Expert Report on behalf of Schlumberger Technology Corporation in the matter of Chris Elliott v. Schlumberger Technology Corporation and Schlumberger Limited (Schlumberger N.V.), Case No. 3:13-cv-0079, United States District Court, District Court of North Dakota, September 16, 2016.

TESTIMONY AND EXPERT REPORTS (JULY 2015 TO PRESENT CONT.)

Expert Declaration on behalf of Starbucks Corporation in the matter of Kileigh Carrington v. Starbucks Corporation, Case No. 37-2014-00018637-CU-OE-CTL, Superior Court of the State of California, County of San Diego, July 21, 2016.

Expert Report on behalf of CEC Entertainment Inc. in the matter of Richard Sinohui v. CEC Entertainment, Inc., Case No. 5:14-cv-02516-JLS (KKx), United States District Court, Central District of California, Southern Division, April 1, 2016.

Expert Deposition Testimony on behalf of Schlumberger Technology Corporation in the matter of Chris Elliott v. Schlumberger Technology Corporation and Schlumberger Limited (Schlumberger N.V.), Case No. 3:13-cv-0079, United States District Court, District Court of North Dakota, March 29, 2016.

Expert Report on behalf of Schlumberger Technology Corporation in the matter of Chris Elliott v. Schlumberger Technology Corporation and Schlumberger Limited (Schlumberger N.V.), Case No. 3:13-cv-0079, United States District Court, District Court of North Dakota, January 29, 2016.

Expert Report on behalf of CEC Entertainment Inc. in the matter of Richard Sinohui v. CEC Entertainment, Inc., Case No. 5:14-cv-02516-JLS (KKx), United States District Court, Central District of California, Southern Division, November 20, 2015.

Expert Report on behalf of StoneMor Partners LP in the matter of Brandi Brodzenski v. StoneMor Partners LP, Case No.: 1:14-cv-2517, United States District Court, Northern District of Ohio, Eastern Division, August 24, 2015.

ACADEMIC PUBLICATIONS

"Are All Precincts Created Equal? The Prevalence of Low-Quality Precincts in Low-Income and Minority Communities," (with M. Barreto and M. Marks), *Political Research Quarterly*, pp. 62, 2008.

"Majority Minority Districts, Co-ethnic Candidates and Mobilization Effects," (with G. Segura.), in *Voting Rights Act Reauthorization of 2006: Perspectives on Democracy, Participation, and Power*, 2007.

"An Assessment of Racially Polarized Voting For and Against Latino Candidates," (with Y. Abosch and M. Barreto), in *Voting Rights Act Reauthorization of 2006: Perspectives on Democracy, Participation, and Power*, 2007.

"Homeowners Versus Renters: Southern California's New Fault Line," (with M. Marks and M. Barreto), *Urban Affairs Review*, pp. 42 and 315-341, 2007.

"Controversies in Exit Polling: Implementing a Racially Stratified Homogenous Precinct Approach," (with M. Barreto, F. Guerra, M. Marks and S. Nuño), *PS: Political Science & Politics*, pp. 39 and 477-483, 2006.

"Are Naturalized Voters Driving the California Latino Electorate? Measuring the Impact of IRCA on Latino Voting in California" (with M. Barreto and R. Ramirez), *Social Sciences Quarterly*, 86 (December) pp. 792-811, 2005.

A C A D E M I C P U B L I C A T I O N S (C O N T .)

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"Latino Voting Behavior in an Anti-Latino Political Context," (with M. Barreto), in *Diversity in Democracy: Minority Representation in the United States*, 2005.

"The Mobilizing Effect of Majority-Minority Districts on Latino Turnout," (with M. Barreto and G. Segura), *American Political Science Review*, 98: 1, 2004.

"Race and Racial Attitudes a Decade After the 1992 Riots," (with M. Marks and M. Barreto), *Urban Affairs Review*, 40: 1 pp. 3-18, 2004.

"Presidential Approval and the Mixed Blessing of Divided Government," (with S. Nicholson and G. Segura), *The Journal of Politics*, 64: 3 pp. 701-20, 2002.

"Targets of Opportunity: Latinos and the Blanket Primary," (with G. Segura), in *Voting at the Political Fault Line: California's Experiment with the Blanket Primary*, 2002.

"Hispanics, Social Capital and Civic Engagement" (with G. Segura and H. Pachon), *National Civic Review*. 90:1, 2001.

"Turning Out the Latino Vote: Did Interest Group Efforts Matter?" (with A. Pantoja), *American Review of Politics*, 20: pp. 141-62, 1999.

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To Be or Not To Be Exempt," *Federal Employment Law Insider*, Vol. 13, No. 4, December 2015 (with S. Bronars and D. Foster).

"How Estimates Can Miss the Mark on Age Discrimination," *Law360*, October 8, 2015 (with S. Bronars).

"Ten Questions to Ask Experts Working with Your Data" *Law360*, September 25, 2015 (with D. Foster and M. Kheyfets).

"Flawed Logic of DOL's Proposed White Collar Salary Test," *Law360*, August 25, 2015 (with D. Foster and S. Bronars).

"Approaches to Hourly Rates Under DOL White Collar Rules," *Law360*, August 14, 2015 (with D. Foster and S. Bronars).

"Statistical Sampling and Assessments of Commonality in Wage and Hour Class and Collective Actions," *Law360*, May 29, 2015.

TRADE PUBLICATIONS (CONT.)

"Statistical Testing of Commonality in Wage and Hour Class and Collective Actions," *Law360*, May 28, 2015.

"Getting Past Reliance on Overall Averages in Wage and Hour Class and Collective Actions," *Law360*, May 27, 2015.

"Narrowed Classes: Statistical Differences and Damages," *Law360*, August 8, 2011, (with J. Stixrud and D. Owens).

"Assessing the Validity of Statistical Samples in Medicare Audits," *Journal of Healthcare Compliance*, May-June 2011.

"The Role of Statistical Analysis in California Meal Break Class Actions After Brinker," *Bender's CA Labor and Employment Bulletin*, December 2010 (with G. E. Anderson).

PRESENTATIONS (2005 TO PRESENT)

"Predictive and Flexible Scheduling: What, Where, When, and Why"

Kronos Retail & Hospitality Summit, Hilton Head, SC,
May 2018.

"Predictive and Flexible Scheduling: What, Where, When, and Why"

Kronos Retail Touchpoints Webinar,
May 2018.

"DOL Overtime Exemption Rule is Final! Understanding Immediate Action Items and Key Compliance Dates"

Business & Legal Resources (BLR),
June, July, October 2016.

"Preparing for the New DOL White Collar Exemption Rules"

Kronos Retail & Hospitality Summit, Pebble Beach, CA,
May 2016.

"The DOL's White Collar Rule Changes: Implications and Today's Must Dos"

Edgeworth Economics Webinar Series,
October 2015.

"Your Applicant Data: Strategic Ways to Proactively Analyze and Manage Them"

Bridgeport Continuing Legal Education, Litigating Discrimination and Harassment Claims, Los Angeles, CA,
August 2015.

"Analysis of Merits and Damages in Pregnancy Discrimination Claims"

American Conference Institute's CLE Employment Discrimination Litigation conference, Chicago, IL,
July 2015.

P R E S E N T A T I O N S (2 0 0 5 T O P R E S E N T C O N T .)

"Use of Data to Analyze Allegations of Unpaid Pre/Post Shift Work"

American Conference Institute's CLE Wage & Hours Claims and Class Actions conference, Miami, FL, January 2015.

"Analysis of Representative Evidence, Commonality and Typicality"

American Conference Institute's CLE Wage & Hours Claims and Class Actions conference, New York, NY, May 2014.

"Your Applicant Data: Out of the Darkness and Into the Light."

Paul Hastings,
April 2014.

"Strategies for Compiling and Presenting Data in Wage & Hour Class/Collective Actions."

Wage and Hour Defense Institute Annual Meeting,
March 2014.

"Using Expert Data Analysis in Wage and Hour Class Actions."

Bridgeport Continuing Legal Education,
March 2014.

"Expert Data Analysis to Address Class Certification Issues."

American Conference Institute's CLE Wage & Hours Claims and Class Actions conference, Miami, FL, January 2014.

"Are You Calculating Work Time Accurately?"

Bridgeport CLE Fair Labor Standards Act conference, New York, NY,
April 2013.

"Use of Experts in Wage and Hour Class Actions."

Bridgeport CLE conference on Wage and Hour Class Actions, Chicago, IL,
October 2012.

"Class Action Data Analytical Issues after Wal-Mart v. Dukes"

Bridgeport CLE Conference on Consumer Class Actions, San Diego, CA,
January 2012.

"Time-Clocks, Employee Swipe Behavior and Implications for Wage and Hour Litigation"

Center for Statistics and the Social Sciences, University of Washington, Seattle, WA,
April 4, 2007.

P R E S E N T A T I O N S (2 0 0 5 T O P R E S E N T C O N T .)

"Majority Minority Districts, Co-ethnic Candidates and Mobilization Effects"

Protecting Democracy: Using Research to Inform the Voting Rights Reauthorization Debate, University of California, Washington Center,
February 9, 2006.

"An Assessment of Racially Polarized Voting For and Against Latino Candidates"

Protecting Democracy: Using Research to Inform the Voting Rights Reauthorization Debate, University of California, Washington Center,
February 9, 2006.

"Controversies in Exit Polling: Implementing a Racially Stratified Homogenous Precinct Approach"

Annual Meeting of the American Evaluation Association, Joint AEA/CEA Meeting, Toronto, ON,
October 27-30, 2005.

"The Use of Acculturation Measures"

Annual Meeting of the American Evaluation Association, Joint AEA/CEA Meeting Toronto, ON,
October 27-30, 2005.

"Correlates of Precinct Quality in Los Angeles"

Annual Meeting of the Western Political Science Association, Oakland, CA,
March 17-20, 2005.

"Latino Politics and the 2004 Presidential Elections" Panel Moderator/Discussant

Meeting on Latino Politics in California 2004-2005 Los Angeles, CA,
January 26, 2005.

APPENDIX B. MATERIALS RELIED UPON

Court Filings

State Defendants' Combined Response in Opposition to Plaintiffs' Motions for Preliminary Injunction, July 10, 2019

Declaration of Michael Shamos, Ph.D., J.D., July 10, 2019

Declaration of Joseph Blake Evans, July 10, 2019

Declaration of S. Merritt Beaver, July 9, 2019

Declaration of J. Alex Halderman, July 18, 2019

Inventory Lists

STATE-DEFENDANTS-00014403.xlsx

STATE-DEFENDANTS-00014404.xlsx

STATE-DEFENDANTS-00014405.xlsx

STATE-DEFENDANTS-00014406.xlsx

STATE-DEFENDANTS-00014407.xlsx

Cobb County DRE Recap Sheets

DRE Recaps - Mar 21 2017.pdf

DRE Recaps - May 16 2017.pdf

DRE Recaps - Apr 18 2017.pdf

DRE Recaps - Nov 8 2016.pdf

DRE Recaps - Dec 5 2017.pdf

DRE Recaps - Jun 20 2017.pdf

DRE Recaps - Nov 7 2017.pdf

DRE Recaps - May 22 2018.pdf

DeKalb County DRE Recap Sheets

Absentee-April 18, 2017.pdf

Absentee-December 5, 2017.pdf

Absentee-June 20, 2017.pdf

Absentee-May 22, 2018.pdf

Absentee-November 7, 2017.pdf

Absentee-November 8, 2016.pdf

April 18, 2017.pdf

December 5, 2017.pdf

June 20, 2017.pdf
May 22, 2018.pdf
November 7, 2017.pdf
November 8, 2016.pdf

Absentee Recap Sheets

Cobb Recap Sheets – Absentee.xlsx
DeKalb Recap Sheets – Absentee.xlsx